№ 00000014

Facility Name: SKINNER LANDFILL

Location: WEST CHESTER, OHIO 9956

EPA Region: V

Person(s) in Charge of the Facility: _____

_____

_____

Name of Reviewer: Scott Byram Date: 7/29/82

General Description of the Facility:

(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

UNPERMITTED WASTE DUMP WHICH RECEIVED VARIOUS POISONS, PESTICIDE INTERMEDIATES, AND METALS. THE MATERIALS WERE BOTH DUMPED IN A LAGOON AND/OR BURIED IN DRUMS. ALL OF THE MATERIALS ARE NOW BURIED. LAST ACTIVITY ON THE SITE WAS IN 1976.

Scores: $S_M = 30.23$ ($S_{gw} = 51.63$ $S_{sw} = 8.36$ $S_a = 0$)

$S_{FE} = 9.72$

$S_{DC} = 2.50$

Figure 1

HRS COVER SHEET

GROUND WATER ROUTE WORK SHEET						
Rating Factor	Assigned Value (Circle One)		Multi-plier	Score	Max. Score	Ref. (Section)
1 OBSERVED RELEASE	(0)	45	1	0	45	3.1
If observed release is given a score of 45, proceed to line 4. If observed release is given a score of 0, proceed to line 2.						
2 ROUTE CHARACTERISTICS						3.2
Depth to Aquifer of Concern	0 1 (2) 3		2	4	6	
Net Precipitation	0 1 (2) 3		1	2	3	
Permeability of the Unsaturated Zone	0 1 (2) 3		1	2	3	
Physical State	0 1 2 (3)		1	3	3	
Total Route Characteristics Score				11	15	
3 CONTAINMENT	0 1 2 (3)		1	3	3	3.3
4 WASTE CHARACTERISTICS						3.4
Toxicity/Persistence	0 3 6 9 12 15 (18)		1	14	18	
Hazardous Waste Quantity	0 1 2 3 4 (5) 6 7 8		1	5	8	
Total Waste Characteristics Score				23	26	
5 TARGETS						3.5
Ground Water Use	0 1 2 (3)		3	9	9	
Distance to Nearest Well/Population Served	0 4 6 8 10 12 16 18 20 24 (30) 32 35 40		1	30	40	
Total Targets Score				39	49	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5				2960	57,330	
7 Divide line 6 by 57,330 and multiply by 100				S_{GW} = 51.63		

Figure 2

Ground Water Route Work Sheet

SURFACE WATER ROUTE WORK SHEET

	Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1	OBSERVED RELEASE	(0) 45	1	0	45	4.1
	If observed release is given a value of 45, proceed to line [4]. If observed release is given a value of 0, proceed to line [2].					
2	ROUTE CHARACTERISTICS					4.2
	Facility Slope and Intervening Terrain	0 1 (2) 3	1	2	3	
	1-yr. 24-hr. Rainfall	0 1 (2) 3	1	2	3	
	Distance to Nearest Surface Water	0 1 2 (3)	2	6	6	
	Physical State	0 1 2 (3)	1	3	3	
	Total Route Characteristics Score			13	15	
3	CONTAINMENT	0 1 2 (3)	1	3	3	4.3
4	WASTE CHARACTERISTICS					4.4
	Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18	
	Hazardous Waste Quantity	0 1 2 3 4 (5) 6 7 8	1	5	8	
	Total Waste Characteristics Score			23	26	
5	TARGETS					4.5
	Surface Water Use	0 (1) 2 3	3	6	9	
	Distance to a Sensitive Environment	(0) 1 2 3	2	0	6	
	Population Served/ Distance to Water Intake Downstream	(0) 4 6 8 10 / 12 16 18 20 / 24 30 32 35 40	1	0	40	
	Total Targets Score			6	55	
6	If line [1] is 45, multiply [1] x [4] x [5] If line [1] is 0, multiply [2] x [3] x [4] x [5]			5382	64,350	
7	Divide line [6] by 64,350 and multiply by 100			S_{SW} = 8.36		

Figure 7

Surface Water Route Work Sheet

AIR ROUTE WORK SHEET

Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 OBSERVED RELEASE	(0) 45	1	0	45	5.1
Date and Location:	NO SAMPLING DONE ∴ NO RELEASE				
Sampling Protocol:					
If line 1 is 0, then S = 0. Enter on line 6. If line 1 is 45, then proceed to line 2.					
2 WASTE CHARACTERISTICS					5.2
Reactivity and Incompatibility	0 1 2 3	1		3	
Toxicity	0 1 2 3	3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
	Total Waste Characteristics Score			20	
3 TARGETS					5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30	
Distance to Sensitive Environment	0 1 2 3	2		6	
Land Use	0 1 2 3	1		3	
	Total Targets Score			39	
4 Multiply 1 x 2 x 3			0	35,100	
5 Divide line 4 by 35,100 and multiply by 100			S_a = 0		

Figure 9

Air Route Work Sheet

	S	S^2
Groundwater Route Score (S_{gw})	51.63	2665.66
Surface Water Route Score (S_{sw})	8.36	69.89
Air Route Score (S_a)		0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		2735.55
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		52.30
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} \,/\, 1.73$		$S_M = 30.23$

Figure 10

WORKSHEET FOR COMPUTING S_M

FIRE AND EXPLOSION WORK SHEET					
Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Containment	(1) 3	1	1	3	7.1
2 Waste Characteristics					7.2
Direct Evidence	(0) 3	1	0	3	
Ignitability	0 1 2 (3)	1	3	3	
Reactivity	0 1 (2) 3	1	2	3	
Incompatibility	(0) 1 2 3	1	0	3	
Hazardous Waste Quantity	0 1 2 3 4 (5) 6 7 8	1	5	8	
Total Waste Characteristics Score			10	20	
3 Targets					7.3
Distance to Nearest Population	0 1 2 (3) 4 5	1	3	5	
Distance to Nearest Building	0 (1) 2 3	1	1	3	
Distance to Sensitive Environment	(0) 1 2 3	1	0	3	
Land Use	0 1 (2) 3	1	2	3	
Population Within 2-Mile Radius	0 1 2 3 (4) 5	1	4	5	8700
Buildings Within 2-Mile Radius	0 1 2 3 (4) 5	1	4	5	2300
Total Target Score			14	24	
4 Multiply 1 x 2 x 3 x 4			140	1,440	
5 Divide line 5 by 1,440 and multiply by 100			S_{FE} = 9.72		

Figure 11

Fire and Explosion Work Sheet

DIRECT CONTACT WORK SHEET

	Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1	Observed Incident	(0) 45	1	0	45	8.1
	If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2					
2	Accessibility	0 1 2 (3)	1	3	3	8.2
3	Containment	0 15 UNKNOWN	1	1	15	8.3
4	Waste Characteristics Toxicity	0 1 2 (3)	5	15	15	8.4
5	Targets					8.5
	Population within a 1-mile radius	0 1 2 (3) 4 5	4	12	20	
	Distance to a critical habitat	(0) 1 2 3	4	0	12	
	Total Targets Score			12	32	
6	If line 1 is 45, multiply 1 x 4 x 5; If line 1 is 0, multiply 2 x 3 x 4 x 5			540	21,600	
7	Divide line 6 by 21,600 and multiply by 100			S_{DC} = 2.50		

2200

Figure 12

Direct Contact Work Sheet

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

INSTRUCTIONS: The purpose of these records is to provide a convenient way to prepare an auditable record of the data and documentation used to apply the Hazard Ranking System to a given site. The source of information should be provided for each entry and should be a bibliographic-type reference that will allow anyone to find the document used for a given data point. Include the location of the document and consider appending a copy of the relevant page(s) for ease in review by any interested party.

FACILITY NAME: SKINNER LANDFILL

LOCATION: WEST CHESTER, OHIO

1 OBSERVED RELEASE

Contaminants detected off site (5 maximum):

NO OBSERVED RELEASE

Reasoning by which the presence of the detected contaminants can be attributed to the facility:

* * *

2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifers(s) of concern:

UNNAMED DRIFT AQUIFER OVERLYING SHALE BEDROCK

Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern:

ESTIMATED STATIC LEVEL NEAR LAGOON IS 679 msl THIS WAS INTERPOLATED FROM WELL LOGS SUPPLIED BY JEFFREY HOSLER, SWDO DIST. GEOLOGIST, BOTTOM OF SKINNER LAGOON ESTIMATED AS GRADE MINUS 6 FT = 735-6 = 729 FT

Depth from the ground surface to the lowest point of waste disposal/ storage: ASSUMED 6 FT.

∴ DISTANCE FROM WASTE MATERIAL TO GROUND WATER IN AQUIFER OF CONCERN IS 729 - 679 = 50 FT.

SCORE = 2

Net Precipitation

Mean annual or seasonal precipitation:

40 INCHES

(HRS MANUAL)

Mean annual lake or seasonal evaporation:

34 INCHES

(HRS MANUAL)

Net precipitation (subtract the above figures):

+6 INCHES

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

SILTY SAND

SANDY SILT

(BORINGS ON SITE 7/20 & 7/21 BY E&E)

Permeability associated with soil type:

$P = 10^{-5}$ cm/s (HRS MANUAL)

SCORE = 2

Physical State

Physical state of waste at time of disposal (or generated gases):

LIQUID, SLUDGE

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

LAGOON, UNLINED BURIED
DRUMS BURIED
LANDFILL UNLINED

Method with highest score:

LAGOON SCORE = 3
LANDFILL SCORE = 3
DRUMS SCORE = 1

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

CYANIDE 3,3 (FIRE)
CADMIUM 3,3
LEAD 3,3
C 56 3,?
C46 3,3
OCTOCHLOROCYCLOPENTENE ?, CHLORDANE 3
HEXACHLOROBENZENE 2,3
NAPHTHALENE 2,1

Compound with highest score:

METALS = 18
C46 = 18
CHLORDANE (IF APPLICABLE) = 18
HEXACHLOROBENZENE = 15
NAPHTHALENE = 9
(HRS MANUAL)

Hazardous Waste Quantity

Total quantity of hazardous waste at the facility (excluding those with a containment score of 0):

100 +- 55 GALLON DRUMS
LAGOON 35' x 40' DEPTH = 6' (DEPTH ASSUMED)
TOTAL QUANTITY = $\frac{100}{4}$ + (35x40x6) ÷ 27 = 336 YRD^3 SCORE = 5

Basis of estimating and/or computing waste quantity:

INFORMATION FROM A MEMO SUMMARIZING THE SKINNER SITUATION FROM WILLIE HARRIS USEPA TO ANTHONY HOLOSKA *** RECD 27 DEC 79

5 TARGETS

Ground Water Use

Use(s) of aquifer(s) of concern within a 3-mile radius of the facility:

DOMESTIC POTABLE SUPPLY

Distance to Nearest Well

Location of nearest well drawing from aquifer of concern or occupied building not served by a public water supply:

SKINNER WELL IS ON SITE LESS THAN 2000 FT FROM PIT
NEAREST OFFSITE WELL AT 1700 FT.

Distance to above well or building:

1700 FT.

Population Served by Ground Water Wells Within a 3-Mile Radius

Identified public-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius:

NONE

Population served by each above public-supply well and how computed:

—

Computation of land area irrigated by supply well(s) drawing from aquifer(s) of concern within a 3-mile radius, and conversion to population (1.5 people per acre):

—

Total population served by ground water within a 3-mile radius:

ESTIMATED AT 1950 PEOPLE
BASED ON 10% OF LOCAL POPULATION IN AREA BEING ON WELL WATER FROM REVIEW OF 8/17/81 OF THE WELL LOGS SUPPLIED BY J. HOSLER OEPA, 54% SHOW WATER BEING TAKEN FROM THE AQUIFER OF CONCERN
SO 10% OF 1950 X 0.54 = 1053 PEOPLE

1 OBSERVED RELEASE

Contaminants detected in surface water at the facility or downhill from it (5 maximum):

No Positive Release Observed

Reasoning by which the presence of the detected contaminants can be attributed to the facility:

* * *

2 ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

Unknown - Assumed flat since the waste materials are buried.

Name/description of nearest downslope surface water:

East Fork Mill Creek

Average slope of terrain between facility and above-cited surface water body in percent:

$$\text{Slope} = \frac{45'}{500'} = 0.09 = 9\%$$

Is the facility located either totally or partially in surface water?

No

Is the facility completely surrounded by areas of higher elevation?

No

1-Year 24-Hour-Rainfall in Inches

2.5 INCHES

Distance to Nearest Downslope Surface Water

500. FT

Physical State of Waste

LIQUID, SLUDGE

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

LAGOON UNLINED BURIED

DRUMS BURIED

LANDFILL UNLINED

Method with highest score:

LAGOON SCORE = 3

DRUMS SCORE = 1

LANDFILL SCORE = 3

4 WASTE CHARACTERISTICS

Refer to Ground Water Route

METALS = 18
C46 = .18

* * *

5 TARGETS

Surface Water Use

Use(s) of surface water within 3 miles downstream of the hazardous substance:

RECREATION.

Is there tidal influence?

No

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

NA

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

NONE

Distance to critical habitat of an endangered species or national wildlife refuge, if 1 mile or less:

NONE

Population Served by Surface Water

Location(s) of public-supply intake(s) within 3 miles (free-flowing bodies) or 1 mile (static water bodies) downstream of the hazardous substance:

NONE

Population served by each above public-supply intake:

Computation of land area irrigated by above-cited intake(s) and conversion to population (1.5 people per acre):

Total population served:

Name/description of nearest of above water bodies:

Distance to above-cited intakes, measured in stream miles.

1 OBSERVED RELEASE

Contaminants detected: NO OBSERVED RELEASE

Date and location of detection of contaminants

Methods used to detect the contaminants:

Reasoning by which the presence of the detected contaminants can be attributed to the site:

* * *

2 WASTE CHARACTERISTICS

Reactivity and Incompatibility

Three most reactive compounds (indicate one used):

Three most incompatible pairs of compounds (indicate one used):

Toxicity

Three most toxic compounds (indicate one used):

Hazardous Waste Quantity

Total quantity of hazardous waste:

sis of estimating and/or computing waste quantity:

* * *

3 TARGETS

Population Within 4-Mile Radius

Circle radius used, give population, and indicate how determined:

1 to 4 mi 1/2 to 1 mi 1/4 to 1/2 mi 0 to 1/4 mi

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

Distance to critical habitat of an endangered species, if 1 mile or less:

Land Use

Distance to commercial/industrial area, if 1 mile or less:

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

Distance to residential area, if 2 miles or less:

Distance to agricultural land in production within past 5 years, if 1 mile or less:

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?